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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/798,889	03/12/2004	Masayuki Takahashi	040113	4896

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EXAMINER	
OMGBA, ESSAMA	
ART UNIT	PAPER NUMBER
3726	

MAIL DATE	DELIVERY MODE
01/24/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/798,889	TAKAHASHI ET AL.	
	Examiner	Art Unit	
	Essama Omgba	3726	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 November 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 and 4-13* is/are pending in the application.

4a) Of the above claim(s) *6 and 7* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,4,5 and 8-13* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on November 1, 2007 has been entered.

Claim Objections

2. Claims 1, 4, 5 and 8-13 are objected to because of the following informalities: in claim 1, lines 12 and 20, --at least-- should be inserted after "the"; and "workpieces" in line 20 should read --workpiece--. Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1, 4, 5 and 8-13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the limitation "the second workpiece" in line 15. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

5. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

6. Claims 1, 5, 8, 10 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Prior Art (AAPA) in view of Horn (US Patent 4,660,266) or Bailey et al. (US Patent 3,818,577) or Yokota (US Patent 6,666,584) and McCrea (US Patent 3,510,551).

Applicant, at pages 1-3 of the specification to be known as AAPA, discloses a bearing manufacturing method for manufacturing a bearing member for supporting a crankshaft of an internal engine, the bearing member having a body part formed of a first material of an aluminum alloy, and a bearing part formed of a second material of an aluminum alloy having a high silicon content, the bearing part having a bearing surface of a semicircular cross section and integrally combined with the body part, wherein the bearing member is manufactured as a half cylinder in a mold. AAPA does not disclose forming the bearing member by casting a primary cylindrical workpiece in a mold and dividing the primary workpiece into halves along a center line to obtain two substantially equivalent secondary workpieces for forming two equivalent bearing members nor does AAPA disclose the recited casting steps. However it is known to form two substantially equivalent bearing members by casting a primary cylindrical workpiece in a mold and dividing the primary workpiece along a center plane including a center axis of the primary workpiece to obtain two substantially equivalent bearing members as attested by Horn, see column 1, lines 12-18 and 34-44 and column 2, lines 24-25. Furthermore,

Bailey et al. teaches casting two parts that are to be clamped together either separately or as an integral piece that is saw-cut to obtain two mating parts, see column 1, lines 15-28. Still Yokota teaches manufacturing a bearing cage as a unitary cylindrical member or as two half cylindrical shells from a cylindrical member that is subsequently divided in two, see column 2, lines 53-57. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made, to have manufactured the bearing members of AAPA from a cylindrical primary workpiece that is subsequently divided a long a center plane, in light of the teachings of Horn, Bailey et al. or Yokota, in order to increase production of the bearing members.

Although AAPA/Horn/Bailey et al./Yokota does disclose the particular recited casting steps, however it is conventional to cast composite articles by forming a first workpiece, placing the first workpiece in a mold with a cavity formed around the first workpiece, and pouring a second material in a molten state around the first workpiece placed in the mold to metallurgically bond together the first workpiece and the second material along an interface therebetween to thus form, in the mold, a primary workpiece including the first workpiece and a second workpiece as attested by McCrea, see column 1, lines 41-48 and 69-72 and column 2, lines 1-6. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made, to have used the casting process of McCrea in the bearing manufacture method of AAPA/Horn/Bailey et al./Yokota, as is known in the art. Applicant should note that bearing members as claimed are typically short cylindrical or half-cylindrical members. Also the coefficient of

linear expansion of the first material disclosed in AAPA is greater than the coefficient of linear expansion of the second material.

Regarding claim 9, applicant should note that it is within the general knowledge of one of ordinary skill in the art to use an appropriately shaped mold for the desired product.

Regarding claim 11, Applicant should note that manufacturing the short cylindrical members by an extrusion process is an obvious matter of design choice.

Regarding claim 13, Applicant should note that such choice of material is conventional in the art.

7. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA/Horn/Bailey et al./Yokota/McCrea as applied to claim 1 above, and further in view of Beyer-Steinhauer et al. (DE 19959540).

AAPA/Horn/Bailey et al./Yokota/McCrea discloses a bearing manufacturing method as shown above. Although AAPA/Horn does not disclose the molten first material being poured into the cavity so as to flow in a swirling current in the cavity, however it is known to pour molten material in mold cavity in a swirling current so as to promote uniform flow of the molten material inside the mold as attested by Beyer-Steinhauer et al., see abstract. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made, to have poured the metal in the method of AAPA/Horn/Bailey et al./Yokota/McCrea so that as to flow in a swirling current in the mold cavity, in light of the teachings of Beyer-Steinhauer et al., in order to promote uniform flow of the molten material inside the mold.

Response to Arguments

8. Applicant's arguments with respect to claims 1, 4, 5 and 8 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Essama Omgba whose telephone number is (571) 272-4532. The examiner can normally be reached on M-F 9-6:30, 1st Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Bryant can be reached on (571) 272-4526. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Essama Omgba
Primary Examiner
Art Unit 3726

eo
January 20, 2008